UNITED STATES PATENT APPLICATION

OF

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FOR

METHOD FOR IMPLEMENTING SYSTEM INFORMAITON BROADCATING FUNCTION IN ASYNCHRONOUS MOBILE COMMUNICATION SYSTEM

BACKGROUND OF THE INVENTION

Field of the Invention

[001] The present invention relates to a method for implementing a system information broadcasting function in an asynchronous mobile communication system.

Background of the Related Art

[002] The IMT-2000, a next generation mobile communication system, is required to assure global use in system design as well as system compatibility with a stationary network, and a high quality service. The IMT-200 system is also required to assure a global roaming service, and to have an open system for easy introduction of future technologies and different applications thereto. Moreover, the IMT-2000 system is required to have a modular system for being ready to development to a more complicated system to cope with future service increase.

[003] In general, a system information broadcasting in the asynchronous IMT-2000 system is implemented as follows.

[004] When a RNC (Radio Network Controller) transmits system information to a base station through a system information update message in NBAP (Node B Application Protocol), the base station transmits the RSIM(RRC System Information Message) generated by system information contained in the system information update message to the air repeatedly according to a scheduling parameter defined in a RRC (Radio Resource Control layer). The system information in the asynchronous IMT-2000 system has one master information block, 2 scheduling blocks, and 19 system information blocks. The information blocks represent different system information, and a user equipment reads one of the system information block depending on its own status, a waiting range, and kind of a transmission channel which belongs to a base station the system information is transmitted therefrom.

The RNC segments the master information block and the system information blocks to the first segment(short), a subsequent segment, the last segment(short), and a complete IB, and transmits to the base station through the system information update message. When the base station receives system information update message, the base station generates RSIMs using system information segment & scheduling parameter. Most of all, one RSIM is genertaed for one system information segment, but in some case, one RSIM consists of several system information segment. When the RSIM is smaller than 256 bits, a padding bit is added to the segment. A data unit obtained from the segmentation of the master information block and the system information blocks is called as an information block segment (IB segment). The base station transmits one RSIM to air at 20ms intervals through a primary common control physical channel. FIG. 1A and FIG. 1B illustrate a diagram showing a relation between the system information block and the IB segment. Here is definition for segments and RRC SYSTEM INFORMATION message.

[005] Each RSIM has 256bits. In FIG. 1A and FIG. 1B, because each of RSIM generated by the master information block, a first system information block, a second system information block, a third system information block, a fourth system information block, a seventh system information block, an eleventh system information block, and a twelfth system information block has a size not exceeding a size of one BCH (Broadcasting Channel) transmission block, each of them has only one segment. On the other hand, each of RSIM generated by a fifth system information block, and a sixth system information block in FIG. 1 has a size exceeding 3 BCH transmission blocks, each of the blocks is segmented into four segments.

[006] As parameters for fixing a scheduling time of the system information, SIB_REP, and SIB_POS are included. The SIB_REP is a parameter representing intervals